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ABSTRACT

Presented is the report made by the Financing Panel of the Graduate Medical Education National Advisory Committee (GMENAC) on the impact of financing issues on graduate medical education medical practice, especially those related to the geographical and specialty distribution of physicians. After an introduction to the study, the following are examined: undergraduate medical education, graduate medical education, compensation for physicians' services, and the role of state and local governments. Twenty-four recommendations are presented, such as: in view of an oversupply of physicians by the year 2000, any increase in medical school enrollment beyond current aggregate levels should be discouraged; family practice programs, at least for a short term should be given special attention; improvement is needed in the government loan program; adequate financial support must be provided for programs directed towards the development of future medical faculty, administrators, and researchers; and public and private reimbursement policies should be adjusted and mechanisms identified to provide incentives for physicians. This report is part of a seven-volume series. References are provided. (LC)

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Report of the Graduate Medical Education National Advisory Committee

to the Secretary, Department of Health and Human Services

ED203768

Volume IV

Financing Technical Panel

HE 014 023

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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The Report of the Graduate Medical Education National Advisory Committee to the Secretary, Department of Health and Human Services, consists of seven volumes:

Volume I GMENAC Summary Report

Volume II Modeling, Research, and Data Technical Panel

Volume III Geographic Distribution Technical Panel

Volume IV Financing Technical Panel

Volume V Educational Environment Technical Panel

Volume VI Nonphysician Health Care Providers Technical Panel

Volume VII GMENAC Members' Commentaries and Appendix

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U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
Public Health Service
Health Resources Administration
Office of Graduate Medical Education
DHHS Publication No. (HRA) 81-654

September 30, 1980

The Honorable Patricia Roberts Harris
Secretary
Department of Health and Human Services
Washington, D.C. 20201

Dear Madam Secretary:

The attached Report of the Graduate Medical Education National Advisory Committee (GMENAC) is in fulfillment of the Committee's responsibilities under the Charters of April 20, 1976, and March 6, 1980.

The charge of the Committee was to advise the Secretary on the number of physicians required in each specialty to bring supply and requirements into balance, methods to improve the geographic distribution of physicians, and mechanisms to finance graduate medical education.

GMENAC significantly advanced health manpower planning in direct and indirect ways.

GMENAC introduced new scientific methodology: Two new mathematical models were developed to estimate physician supply and requirements.

GMENAC refined the data bases; figures for estimating the supply of practitioners in every specialty and subspecialty from the distribution of first-year residency positions have been developed.

GMENAC integrated the estimates of supply and requirements for physicians with nurse practitioners, physician assistants, and nurse midwives.

GMENAC introduced new concepts to clarify assessment of the geographic distribution of physicians and services; standards are proposed for designating areas as adequately served or underserved based on the unique habits of the people in the area.

GMENAC recommends that medical service revenues continue to provide the major source of funds to support graduate medical education.

GMENAC has initiated a collaboration between the private sector and the Government; the unique expertise of each achieves a level of comprehensiveness in health manpower planning not previously experienced.

GMENAC estimates a surplus of 70,000 physicians by 1990. Most specialties will have surpluses, but a few will have shortages. A balance by 1990 cannot be achieved. Until supply and requirements reach a balance in the 1990s, GMENAC recommends that the surplus be partially absorbed by expansion of residency training positions in general/family practice, general pediatrics, and general internal medicine.

Recommendations are directed at achieving five manpower goals:

1. To achieve a balance between supply and requirements of physicians in 90s, while assuring that programs to increase the representation of minority groups in medicine are advanced by programs to broaden the applicant pool with respect to socio-economic status, age, sex, and race;

2. to integrate manpower planning of physicians and nonphysician providers when their services are needed, and to facilitate the function of nonphysician providers;

3. to achieve a better geographic distribution of physicians and to establish improved mechanisms for assessing the adequacy of health services in small areas;

4. to improve specialty and geographic distribution of physicians through financing mechanisms for medical education, graduate medical education, and practice, and

5. to support research for the next phases of health manpower planning.

The Committee unanimously recommends the immediate establishment of a successor to GMENAC. Its establishment is essential to the implementation of the manpower goals and recommendations in the Report. The full GMENAC methodology must be applied to the six specialties which have not been analyzed. The requirements estimates for each of the specialties and subspecialties must be tested, monitored, and reassessed on a continuing basis. Important studies on financing, geography, and nonphysician providers should be undertaken.

The collaborative working relationship between the private sector and the Government facilitated a congruence of interest in planning and in implementing improvements to best meet the needs of the Nation. The momentum of this collaboration should be continued without interruption.

Respectfully submitted,

Alvin R. Tarlov

Alvin R. Tarlov, M.D.
Chairman
Graduate Medical Education
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For the Committee

Enclosure: Volumes I-VII

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I. INTRODUCTION

The Financing Panel of the Graduate Medical Education National Advisory Committee (GMENAC) was formed in order to identify issues and options for the financing of graduate medical education (GME), emphasizing those that would impact on the geographical and specialty distribution of physicians, and to recommend a comprehensive program for the financing of GME to affect changes that would be recommended by GMENAC in order to meet societal needs for medical services. The scope of the Financing Panel's charges was expanded to the examination of financial issues in undergraduate medical education as well as medical practice as they impact on graduate medical education and on the achievement of a balanced distribution of physicians' services.

The Financing Panel has been under the leadership of Eugene Staples, Director, West Virginia University Hospital. It was composed of GMENAC members who had special expertise and interest in any of the several areas which impact on the financing issues that were the concern of the Panel.

Financing issues impact on graduate medical education in several different ways, and these have formed the topics of the deliberations of the Panel. One of the primary concerns of the Panel involved the stable funding of institutions and medical education programs, especially for those specialties that are in short supply, and mechanisms for student financial support. Other major concerns of the Panel included the economic and social issues of medical education such as the impact of financing on physician specialty and geographic distribution, alternative reimbursement mechanisms, and issues of cost and equity in the financing of graduate medical education from the patient care dollar. The Panel was interested in the growing role of the States in financing medical education and in assuring an adequate geographic and specialty distribution of physicians in the local areas. The Panel addressed the issues of quality of graduate medical education programs and efficiency in maintaining and administering existing programs and developing programs for new specialties.

The Financing Panel served as the forum for debate on financing issues and heard presentations from experts and interested parties in this many-faceted area. For example, at a symposium on financing of graduate medical education held on April 17, 1978, the following people representing their respective organizations participated:

- Jay Dobkin, M.D., Physicians National Housestaff Association
- Richard Knapp, Ph.D., Association of American Medical Colleges
- Ms. Nancy Noie, American Hospital Association
- L. Robert Martin, M.D., Society of Teachers and Family Medicine
- Daniel J. Ostergaard, M.D., American Academy of Family Physicians
- David Thomson, M.D., American Hospital Association
- J. Pat Tokarz, M.D., Resident Physicians Section, AMA

Robert A. Derzon, former Administrator of the Health Care Financing Administration, addressed the Panel on the subject of Medicare-Medicaid reimbursement and the financing of graduate medical education. A presentation was heard by David Salkever, Ph.D., of the Johns Hopkins University, on his research work regarding financing and other factors which affect the supply of first-year residency positions offered by teaching hospitals.

Earlier staff support for the Panel was provided by the National Center for Health Services Research (NCHSR), coordinated by Samuel P. Korper, Ph.D. and Mary A. Fruen, Ph.D. More recent staff support, including the writing of this report, was done by the Office of Graduate Medical Education of the Health Resources Administration, led by Paul M. Schwab and Barry J. Greengart, Ph.D. One of the key projects, funded by NCHSR for the Panel was the Urban Institute Report, Financing Medical Education: Issues and Options by Jack Hadley, Frank Sloan, Robert Lee, and Roger Feldman. This comprehensive report which has recently been expanded into a book (Prodist, New York, 1980) discusses the background issues and data involved in the financing of medical education and offers a series of options and recommendations concerning:

-- reimbursement for patient care services
-- scholarship and loan programs
-- changes in medical school tuitions
-- institutional support for medical schools and teaching hospitals
-- capitation payments
-- State and local government programs
-- grants to physicians.

These options were evaluated according to the following set of criteria:

-- impact on physicians' specialty and geographic distribution
-- costs and distribution of costs
-- impact on medical school and teaching hospital stability
-- equity considerations and ease of implementation, administration, and monitoring.

Consideration and debate of these options formed much of the Financing Panel's recommendations on these issues.

Sections 9 and 10 of the GMENAC "Interim Report" April 1979, have been devoted to issues of finance and reimbursement and were written by the staff of the Financing Panel. Section 9, "Relationship of Physician Fees and Income to Specialty and Location Choice," presents background and data on this subject which is a determinant of the effectiveness of financial incentives to the provision of a balanced distribution of physicians' services. Section 10, "Considerations in Financing Graduate Medical Education," presents background and data on the complex issues involved in the support of graduate medical education in the hospital and ambulatory settings and also addresses the question: "Who Should Pay for GME?" The complexities of these issues have not been resolved and further research is necessary in the area of cost accounting to isolate the total costs of graduate medical education in the hospitals and ancillary facilities.

The Panel considered financing options in conjunction with, and complementary to, nonfinancing options in the effort to influence the career decisions of physicians in training. The Panel recognized the leadership and efforts of the private sector in taking steps to alleviate shortages in certain specialties and in providing medical care to underserved areas. The deliberations of the Panel have not proceeded in a vacuum. They interacted with the deliberations of the other technical panels of GMENAC. First, the specific applications of the Panel's recommendations were premised upon the estimations of the Modeling Panel as to how many physicians are required in the various specialties. Also, the areas of concern of the Financing Panel overlap, to an extent, the concerns of several other panels, notably the Geographic Distribution Panel, whose goal was to ensure a balanced geographic distribution of physicians' services. The convener of the Geographic Distribution Panel, Michael Zubkoff, Ph.D., was a member of the Financing Panel, and a joint meeting between the two panels was held to discuss common issues, goals, and strategies.

Section II discusses in some detail the background data and considerations of each major issue highlighted previously. They form the basis of the recommendations and options that are presented in the final section on "Financing/Reimbursement Conclusions and Recommendations."

II. FINANCING/REIMBURSEMENT ISSUES

UNDERGRADUATE MEDICAL EDUCATION

The deliberations of the Finance Panel regarding undergraduate medical education (UME) largely dealt with the creation of an environment of support of teaching institutions and programs to foster primary care specialties and the financial support of medical students through scholarship and loan programs. The latter are often tied to service obligations in designated underserved areas, thereby accomplishing the joint goals of providing the financial means for students to attend medical school and also alleviating medical care shortages in currently underserved areas.

Institutional Support

Institutional support of medical schools has taken the form of capitation grants, income or block grants, and categorical or special projects grants.

Capitation grants were the chief means to alleviate what was perceived to be an aggregate shortage of physicians in the 1960s and early 1970s. The amount of the grant is directly tied to the institution's enrollment of medical students, thereby providing an incentive to increase enrollments. The passage of the Health Professions Educational Assistance Act of 1976 (P.L. 94-484) signaled a shift in concern from the aggregate supply of physicians to the distribution of physicians by specialty and geographic area. In passing the 1976 Act, Congress declared that "there are many areas in the United States which are unable to attract adequate numbers of health professions personnel to meet their needs; and physician specialization has resulted in inadequate numbers of physicians engaged in the delivery of primary care" (U.S. Congress, P.L. 94-484). Medical school capitation grants were henceforth made conditional on specified proportions of residents in primary care specialties. In fact, the required proportion of 50 percent of residents in primary care specialties had already been met independently of governmental inducements before this program became effective. However, it has been argued that capitation payments to medical schools should be deemphasized since they serve to increase the aggregate supply of physicians in the face of a national concern of physician oversupply (Califano, 1978). Furthermore, the number of residents in primary care specialties is generally in the control of teaching hospitals, not the medical schools. It is generally accepted that the mix of specialty training positions offered by teaching hospitals has a direct effect on the future distribution of physician specialties. It is therefore argued that institutional support should be directed towards teaching hospitals

for residents in designated shortage area specialties in order to encourage the expansion of positions offered in these specialties.

Income or block grants are grants made to institutions without restrictions as to the activities supported by the grants. As such, they have little or no effect on the output of the institutions in terms of the geographical or specialty distributions of its graduating physicians.

Categorical or special projects grants are grants which are geared towards a special project or category of training such as family practice or other primary care specialty, or construction, or renovation of training facilities in an ambulatory care setting. These are most effective in supporting the targeted program or facility, although cross-subsidization could still occur.

Grant support is also offered to teaching hospitals for residencies in family practice and other shortage area specialties. It is felt that focusing such support at the graduate medical education level provides maximal effect in increasing the number of physicians who enter practice in these and other shortage area specialties, since the financial support provides for increased numbers of residency positions offered by teaching hospitals. Experience with Federal support of residency training in psychiatry and family practice suggests that the number of residency positions offered and filled are sensitive to financial incentives (Hadley, et al., 1978 and Hadley, 1980). Indeed, without such outside support it could be argued that a number of these programs might not be able to exist under present circumstances.

Primary care specialties, especially family practice, and ambulatory training facilities, require financial support through grant programs in order to compensate for the less favorable reimbursement rates which they receive compared to those specialties which are primarily hospital oriented. Preceptorships and similar programs provide primary care training experiences and also as a by-product provide health care services to underserved areas. A primary example of a decentralized educational activity is the Area Health Education Centers (AHECs) program which was authorized by the Health Professions Educational Assistance Act. These centers are established by medical schools and provide for decentralized education and clinical training in rural and other underserved area sites away from the major medical school teaching hospitals. (Further references to the AHEC program can be found in the report of the GMENAC Geographic Panel.)

Student Support

Financial support to medical students through scholarship and loan programs are an important mechanism of ensuring the feasibility of medical school education to qualified students from moderate-to-low income backgrounds and underrepresented ethnic groups. Such students may be more likely to enter practice in the rural areas and primary care specialties. Currently scholarships and loan programs are a major component of financing for medical students. Over 50 percent of all medical students have received loans in recent years; in 1977-78 these

loans totaled $126 million. In addition more than 40 percent of medical students received some form of scholarship aid in 1978, and these totaled almost $80 million (Hadley, 1980). It is expected that as medical schools' tuitions rise, these financial aid mechanisms will assume increasingly important roles.

Both scholarships and loans are financial mechanisms which permit students to finance their education out of future earnings. In addition, they are often tied to obligated service in designated underserved areas through programs such as the National Health Service Corps as a means to ensure medical services to these areas.

Scholarships with service obligations, by forcing students to make a binding commitment, appear to offer more certainty to planners as to the number of future physicians who will serve in underserved areas; whereas loans with forgiveness options appear to offer more flexibility to the students in planning their careers. Scholarship programs may be more attractive to low income or minority students who may be unwilling to assume a large burden of debt to finance their medical education.

It is argued that there is little justification for unrestricted scholarship and loan programs which provide implicit subsidies to medical students to pursue high income medical careers, but do not affect their career decisions towards service in underserved specialty and/or geographic areas. Unsubsidized loan programs and loan and scholarship programs, both with and without service obligations, will remain part of medical students' financing of their educations in the future as long as tuitions continue to rise above the financial reach of all but the affluent.

GRADUATE MEDICAL EDUCATION

Graduate medical education (GME) and training take place primarily in teaching hospitals through residency and fellowship programs. Since the graduate physicians are training as they are performing patient care services in the teaching hospitals, it is difficult to isolate the total cost of graduate medical education from patient care costs.

Total Costs of GME

The total costs of graduate medical education can be generally divided into three components: (a) The costs of stipends and fringe benefits to residents and fellows, (b) educational cost factors such as payments to teaching physicians and other faculty, and other direct costs such as library and audiovisual centers, administrative services as well as a proportion of general hospital expenses that are allocable to graduate medical education, and (c) the costs of additional tests and ancillary services which are allegedly ordered by residents and by teaching physicians for the primary purpose of training.

Stipends and fringe benefits--Of the three components of GME costs, stipends and fringe benefits are the most easily identifiable. In 1976-77, an estimated $1.02 billion was spent on stipends and fringe benefits for residents and $.26 billion for fellows, thereby totaling $1.3 billion for approximately 60,000 residents and 15,000 fellows (Knapp, 1977). The Council of Teaching Hospitals (COTH) House Staff Survey has estimated the average cost for stipends and benefits to residents as $16,981-$17,984 in 1978-79 (Checker, 1977).

These costs comprise more than five percent of total costs to teaching hospitals, according to the Institute of Medicine's study of 81 non-Federal teaching hospitals. Total costs which could be allocated to graduate medical education, excluding faculty salaries, comprise an estimated 6.5 percent of total costs (IOM, 1976).

Educational cost factors--Direct costs include payments to teaching staff and other direct costs of GME programs. Indirect costs are those items such as depreciation of buildings and equipment, maintenance expenses, communications, administrative services, cafeteria and laundry services, etc., which can be allocated to GME cost centers.

Other than stipends and fringe benefits to house officers and direct costs of teaching programs (excluding payments to teaching physicians), it is difficult to estimate the known costs of GME programs. These diffulties stem from three factors, as described by Yoder and Brady in 1976 and by Yoder in 1977:

> Organizational: Graduate medical education takes place in a multiplicity of organizational settings, including medical schools, and ambulatory facilities. Personnel and resources are contributed from all of these institutions, and no uniform accounting system covers all of these organizational settings.
>
> Conceptual: Conceptual difficulties arise from the dual nature of graduate medical education. Interns and residents are active in several roles in teaching hospitals, including students under the supervision of teaching physicians, instructors to undergraduate and other graduate medical students and as providers of patient care.
>
> Data problems: Current hospital accounting and cost reporting systems provide very limited data for distinguishing costs related to patient care from those related to training of residents. Indirect costs are not likely to be allocated to graduate medical education programs, and revenues are not related to the programs which are supported, except for grants and other revenues which are restricted to a particular activity. Hospital revenues are merged into a general operating fund from which most expenditures are made.

Costs of Additional Tests and Other Ancillary Services--The GME cost factors for these services which are allegedly ordered by residents and by teaching physicians for the primary purpose of training are

essentially unknown. They cannot effectively be separated from costs of patient care, and there are no standards to use as baseline or acceptable minimum. The extent to which the patient benefits from each additional test cannot be easily measured. These cost factors and others which stem from possible differences in patterns of care rendered in teaching hospitals can perhaps be examined through comparisons of costs of care at teaching hospitals vs. nonteaching hospitals, as will be discussed later.

Payments to Teaching Physicians

The costs to GME for payments to teaching physicians are difficult to measure for two reasons:

Teaching physicians engage simultaneously in patient care, instruction, and research activities; it is therefore difficult and often arbitrary to allocate a portion of their compensation to graduate medical education.

There are numerous and varied financial relationships of teaching physicians with medical schools and/or hospital centers. Teaching physicians are often salaried by medical schools, may have affiliations with several institutions and also receive income directly from patients. Therefore, the teaching hospital may not have a complete account of the compensation to teaching physicians. The report on data collected from the Institute of Medicine survey of 96 teaching hospitals (IOM, 1976) describes the various financial arrangements between hospitals, medical schools and teaching physicians. It discusses the reasons for the inability of the data to support an estimate of these educational cost factors.

Allocation of Costs

The allocation of costs of compensation of housestaff and teaching staff between patient services and educational activities is difficult and often arbitrary because of the apprenticeship nature of the GME experience. Interns and residents gain much of their education by performing patient services under varying degrees of supervision by teaching physicians and other residents, in addition to teaching and research activities. Estimates based on the Institute of Medicine analysis of house officer activities at the 96 teaching hospitals reveal the following percentage breakdown of house officers' schedules: 62 percent--activities related to patient care (25 percent of these while under supervision); 15 percent--activities related to patient care combined with teaching other house officers and medical students; 17 percent--learning; 4 percent--research; 2 percent--administration and other (IOM, 1974). An attempt has been made to allocate house officers' activities between patient care and education by the development of algorithms for assignment to various categories regarding the relationship to patient care, learning, teaching, and research (Technomics, 1976). However, such allocation rules are to an extent arbitrary and depend on one's concept of the role played by house staff.

Moreover, the data upon which the allocation is based are gathered from activity logs submitted by the residents and therefore may be subjective and inaccurate.

Methods of Estimating Costs of GME

One approach to determining the cost of GME in consideration of the patient care services performed by housestaff is to balance the replacement value of these services against the measured direct and indirect costs of educational programs. Using this approach, a study (Freymann and Springer, 1973) conducted at Hartford Hospital in Connecticut attempted to demonstrate that if all educational programs were abolished it would cost more to provide the same quality of essential hospital services. This study dealt only with those cost centers that are easily measurable--direct costs of educational programs, costs for auxiliary support such as administration of education, audiovisual services, libraries, etc., and indirect costs. It did not take account of the other costs involved in the intermingling of training with patient care services.

The replacement costs consisted of estimated direct personnel costs for qualified physician and nursing staffs who would perform patient services at the same level of quality as performed by the residents and interns.

Analysis of replacement costs for residents' services has been undertaken only at the level of the individual hospital where estimates of replacement personnel can be made by hospital officials who are familiar with the needs of their institution. It is not clear how this methodology can be applied to hospitals of different types whose structure, personnel requirements, and cost accounting approach are likely to differ. Moreover, the estimation of replacement cost is entirely hypothetical and is dependent on the judgment of hospital officials who evaluate services, requirements, and productivities of various types of personnel. Also, this methodology does not take into account the level of services provided in teaching hospitals which might be attributed to the presence of GME training programs.

A second approach to the measurement of the costs of GME is to assess the incremental effect of GME programs on the hospital costs function. Statistical methods are used to analyze the effect of various cost factors, including the presence of GME programs, on the costs of producing hospital services. Although several studies (cited in Yoder, 1977, pp. 14-15) of hospital cost relationships showed a positive correlation between the presence of residents and hospital costs, the results are misleading since the presence of residents is often associated with a case-mix of more complicated and severe illnesses that are treated in teaching hospitals. Therefore, the higher costs could be attributed to requirements for more intensive treatments rather than the presence of a teaching program. Another problem with this method of analysis is that the hospital costs' function usually does not account for the full cost of providing patient services, since hospital payments to residents would be included in the hospital cost statements, whereas

payments to attending physicians would not be included, since they are usually not employed by the hospital. An analysis of hospital cost functions was undertaken for the radiology departments of Veterans Administration hospitals by the Rand Corporation (Massell and Hosek, 1975). Since physicians in VA hospitals are salaried employees, more complete production costs could be determined, thereby making the analysis feasible. The analysis of the production costs for most procedures showed that costs were lower in radiology departments with residency programs than in departments without residency programs.

An analysis of the effect of GME on third-party payments to hospitals was performed on Medicaid claims data for inpatient episodes occurring in several New Mexico hospitals--one teaching hospital and four nonteaching hospitals, (Neu, 1976). The study controlled for diagnosis, age, and sex of the patient and included physician payments as well as hospital payments. Regression equations were estimated separately for each diagnostic category and showed that total Medicaid payments per episode averaged 12 percent lower in the teaching hospital, mainly because of the lower payments for physicians' services that were made possible by the presence of GME programs. Of course, costs which are covered by third-party reimbursement do not constitute the total costs to the hospital of providing patient services, but a relevant factor in policy decisions regarding the use of reimbursement funds to support the costs of GME.

Training Programs in Ambulatory Facilities

Training of residents has traditionally taken place in the inhospital settings rather than ambulatory settings for two reasons. First, it is regarded as more efficient to train residents in the hospital setting considering the time factor and proximity of testing facilities and other ancillary services of the hospital. Moreover there are problems in financing GME programs in the ambulatory setting. The current third-party reimbursement structure provides disincentives for providing training facilities in ambulatory settings since essentially all physicians' services are reimbursed on a charge or fee basis, whereas hospital educational expenses are generally reimbursed on a cost basis. This can put a financial squeeze on physicians' provision of training programs if there are limits on what a physician or clinic can expect to be paid because of Medicare and Medicaid ceilings or low levels of insurance coverage; whereas in the hospital setting GME costs are regarded as a cost factor for which appropriate reimbursement is sought. In a study of residency training programs in the ambulatory setting of two prepaid practices and two fee-for-service practices (Stern, et al., 1977), it was determined that revenues generated by the residents accounted for only 77 percent of total program costs in the fee-for-service practices. Total costs included training, supervision, and administration costs, thereby implying that training programs in ambulatory settings may be unprofitable and would require subsidies to maintain their viability. These conclusions, however, are highly sensitive to the unique circumstances of the individual practices which

were examined, in terms of the nature of the residents' outputs and their productivity, supervision required, and pricing considerations for the services provided.

Suggestions for Further Research

Because of the apprenticeship nature of the GME experience and the loose organizational ties of teaching physicians with hospitals, researchers to date have been unable to determine the total costs of GME programs. Suggestions for further research include development of better hospital cost accounting and reporting systems, refinement of techniques of allocation of house officers' activities to education and service components, further analysis and clarification of the costs to GME for payment to teaching physcians, and development of standards of patient care so that the cost of "excess" tests and ancillary services could be measured.

Methodologies are being developed for assessing both the direct and indirect costs of GME through accounting procedures, and from economic and statistical analyses based on hospital discharge data through comparison of hospitals both with and without teaching programs. These methodologies are based on a study of the potential of such procedures for isolating the costs of GME conducted by the Health Services Research and Development Center of the Johns Hopkins University (Steinwachs, 1980). The accounting analysis is based on the uniform hospital cost reporting system established by the Health Services Cost Review Commission of Maryland, for the purpose of isolating the direct and attributable costs of GME as discussed earlier. The economic and statistical analyses are based on the development of cost function equations which examine the relationships of input characteristics to costs for similar inpatient episodes. They seek to determine the indirect costs of GME programs in teaching hospitals. These are related to differences in the patterns and costs of patient care which are due to the GME programs.

Sources of Support for Graduate Medical Education

Currently, reimbursement for medical services by third parties is the primary source of revenues for stipend support of graduate medical education. Table 1 provides available data on sources of support of GME.

According to the COTH Survey of House Staff Policy and Related Issues, 1977, 75 percent of support of house staff in non-VA hospitals is derived from patient revenues. Of the remaining 25 percent of the funds, 5 percent was State appropriation, 7 percent municipal appropriation, and less than 3 percent National Institutes of Health (NIH) or other direct Federal funding. Medical school funds, physician fees, foundations and other sources accounted for the remaining 11 percent (Checker, 1977).

Table 1

Percentage Distribution of Funding Sources for Support of Intern and Resident Stipends

Source of Funds	I. COTH Hospitals (N=252)	II. IOM Hospitals (N=81)	III. Tarlov Int. Med. Program (N=418)
	Percentage of Dollar Support		
Total percent	100	100.0	100.0
Patient Revenue/ General Operations	75	79.1	68.4
Physician Fees	2	.7	1.9
Medical school/ university funds	2	6.2	--
State Appropriations	5		10.7
Municipal Appropriations	7	5.2*	4.9
NIH	1		11.0@
Other Federal Agencies	1		
Endowment/Foundations/Voluntary	1	.5	.8
Other	8	8.4	2.6

*All government funds combined
@All Federal funds combined

Sources: I. Checker, A. COTH Survey of House Staff Policy and Related Information, 1977.

II. Yoder, Sunny G. and Joseph T. Brady, Graduate Medical Education Costs and Sources of Support, IOM, Mimeo, 1977.

III. Tarlov, et al., National Study of Internal Medicine Manpower Residency Training 1976-1977, Annals of Internal Medicine, 88:413-420, Mar 1978.

On the basis of the IOM study of 81 non-Federal teaching hospitals, Yoder and Brady (1976) reported that 79 percent of house officers' compensation was taken from the hospital general operating funds (the major part of which is derived from patient service revenues). Six percent of house officers' compensation came from medical schools, 5 percent from government sources and the remaining 10 percent from other sources. Medicare provided 26.6 percent of the total patient service revenue, while Medicaid provided another 17.5 percent. All other payers accounted for the remaining 55.8 percent.

Tarlov (1977) found that 68 percent of support for internal medicine resident stipends was derived from patient revenues, a lower proportion than found in the other two studies. Seven percent of direct financing came from State appropriations, 6 percent from municipal appropriations and 14 percent from Federal sources, for a total of 27 percent from all government appropriations combined. (This figure, which is the only one to include residencies in the Veterans Administration, contrasts with 14 percent of the total of direct funding from government sources in the COTH study and 5 percent in the IOM study.) In the Tarlov study the remaining 5 percent was derived from physician fees, foundations, and other sources.

Federal Support of GME

Medicare and Medicaid combined are the largest third party reimbursers for patient care services (IOM, 1976). Medicare provides support for GME in two major ways. Hospitals are reimbursed on a reasonable cost basis under Part A of Medicare provisions (hospital insurance). Allowable hospital costs include a pro rata share of salaries, fringe benefits and related support costs of house staff in approved training programs, and compensation for supervisory and administrative time by teaching physicians. Private physicians are reimbursed on a customary, prevailing, reasonable charge basis under Part B (supplementary medical insurance). Part B fees for patient care services paid to teaching physicians in medical schools or teaching hospitals may be reallocated to pay faculty salaries and other GME costs.

Reimbursement to teaching physicians through Medicare has proven problematical because of the distinctions made between Part A and Part B "professional services" which are diagnostic and therapeutic services rendered in direct patient care. Theoretically, a teaching physician when teaching and supervising while simultaneously rendering patient care can qualify for double payments by Part A and Part B of Medicare. Section 227 of 1972 Social Security Amendments and other proposals attempted to remedy abuses by establishing tests to determine the level of personal care rendered by the teaching physician. However, the opposition which was aroused by these proposals and the regulatory difficulties that would be entailed by their enforcement prevented the effective enactment of these rules (Gabel, 1978). This is another example of the difficulties presented in attempting to separate the inextricably bound joint products of teaching and patient care in teaching hospitals.

As previously described, Medicare and Medicaid provide a pro rata share of resident stipends and fringe benefits (as well as certain other educational costs) according to the proportion of hospital costs reimbursed by Medicare and Medicaid. Using this mechanism, in 1976-77 Medicare and Medicaid paid an estimated 35 percent of resident salaries and fringe benefits in non-Federal hospitals (Derzon, 1978). The COTH study (Checker, 1977) found that two percent of resident stipends and fringe benefits at non-Federal hospitals were provided by other Federal agencies. In addition, other graduate medical education costs are supported by the Federal Government through programs such as NIH training grants for fellows, primary care special project grants, Medicare educational expense payments, etc.

Federal residency programs educate a significant percentage of residents in the U.S.; 17.8 percent of all resident stipends were paid to residents in training in Federal programs in 1976-77. When combined with Federal support through Medicare and Medicaid, it appears that about half of the total stipends and fringe benefit costs of residents are supported by the Federal Government (Fruen, 1979).

COMPENSATION FOR PHYSICIANS' SERVICES

Most physicians in the United States are paid on a fee-for-service basis but a small but increasing percentage of physicians are paid on a salary or capitation basis. The manner of compensation for physicians' services may affect the geographic location of physicians, the prices charged for their services, and the mix of services provided. Also, these considerations may influence the specialty and geographic location career choices for physicians-in-training.

Currently Practicing Physicians

In 1977 approximately 60 percent of physicians' revenues were paid by third-party payors on behalf of patients. (Gibson and Fischer, 1977). The reimbursement mechanisms of Medicare, 26 State Medicaid agencies, and many of the private health insurance plans are based on the customary, prevailing, and reasonable (CPR) method rather then by a negotiated fee schedule. The CPR method of reimbursement is based on the lesser of the reasonable fees charged by the physicians in the locale and the particular physician for the service provided. This means that payment levels are reflective of the individual physician's prior billings for each service and prevailing fees in a particular area. Therefore the CPR method of reimbursement has the effect of preserving interregional fee differences and also interspecialty differences since nonprimary care specialists have tended historically to charge higher fees than primary care physicians for presumably similar services (Gabel and Redisch, 1979). One alternative for compensating physicians within the category of fee-for-service is by means of a standardized fee schedule which designates the maximum level of third-party reimbursement for a specific service (Gabel and Redisch, 1979). The fee schedule mechanism is

utilized by most West European nations, 24 State Medicaid agencies, and many U.S. private health insurance plans. The schedules can be derived through negotiations, on the basis of a survey of physicians' billed charges, (Glaser, 1977) or on the basis of a relative value system.

An alternative to the fee-for-service payment system for physicians in private practice (either the CPR method or the standardized fee schedule) are salary or capitation payments to physicians who are organized under an institutional setting or in a health maintenance organization (HMO) environment. One form of HMO is a health care delivery system in group practice setting wherein the subscribers pay a flat monthly premium to the HMO, and comprehensive medical care services are provided by a closed panel of physicians among whom the patients choose, except for emergencies. The physician-members are paid either a straight salary or salary plus bonus for reduced hospitalizations by the HMO regardless of the amount of services they deliver. In these institutional settings there is internal managerial review of the utilization of the physician's services for each specialty. The statistics produced by these analyses provide useful data on the utilization of the physician's service in this type of environment.

The other form of HMO that retains the traditional features of doctors practicing in their own offices and charging fees for individual services is the Individual Practice Association (IPA). Like the prepaid group practice, the IPA operates on a budget determined by annual premium income. The physician members agree not to exceed in aggregate the budgetary limitations imposed by the capitation pool of the IPA. They further develop peer controls of utilization and quality in order to meet these budgetary limits (American Society of Internal Medicine, 1979-80).

An additional financial issue affecting currently practicing physicians is that third-party payors offer more complete coverage for inhospital care and for technology-intensive services. This situation theoretically creates a financial incentive of unknown size to alter the mix of services which are provided away from primary care, time-intensive services in the ambulatory setting (Hadley, 1980).

Incentives to Physicians-In-Training

Besides affecting the mode of practice of currently practicing physicians, the incentives mentioned previously are observable by physicians in training when making their specialty and geographic location career choices and may reinforce decisions to practice in nonprimary care specialties and facilities. Although it is contended by some that the anticipated earnings in the various specialties is a determinant of specialty choice and geographic location/ practice, the available evidence neither fully supports nor refutes this assertion. Recognition exists that a wide variety of factors may very well impact specialty and geographic choice decisions (see Educational Environment and Geographic Distribution Panel reports).

Geographic differences exist among physicians' incomes. According to American Medical Association data, median net annual income for

physicians differs in most specialties between metropolitan and nonmetropolitan areas, both overall and within specialties (American Medical Association, 1980). Medicare reimbursement rates are correspondingly higher in areas with higher physician-to-population ratios, higher concentrations of medical schools, and higher per capita incomes. These data are not to suggest that economic considerations are the major factor in the specialty and geographic location choice of graduate physicians, especially as these differences have not clearly been related to interregional cost of living differences. The one study (Sloan, 1970) which attempted to relate anticipated future earnings to the number of physicians in residency programs of certain specialties found that income has a positive but small impact on the number of residents in a specialty. Moreover, many factors appear to be relevant to a physician's choice of specialty and location including the individual's sociodemographic characteristics, personal preferences, and expected conditions of practice and life in a particular area (see Educational Environment and Geographic Distribution Panel reports). However, one variable that is amenable to public policy changes is reimbursement and expected earnings, and as mentioned by Hadley, et al. (1978) it is only necessary for a small proportion of young doctors to find financial factors sufficient to induce them to enter shortage area specialties and geographic locations to achieve significant redistribution objectives. It is acknowledged that net positive and negative effects from reimbursement manipulation are unknown.

Effect of Reimbursement Policies on Residency Programs

Since over three-fourths of the support of residency programs is derived from income received from patient care reimbursement for services at teaching hospitals, the CPR method of reimbursements may affect the distribution of specialties and the mix of services provided in training institutions. Notably, since outpatient care is not reimbursed fully by Medicare and Blue Cross-Blue Shield insurance plans whereas inpatient care is, hospital officials may be induced to offer more training positions in inpatient care and find it correspondingly more expensive to offer training opportunities in outpatient facilities (see earlier section on Training Programs in Ambulatory Facilities). Similarly, the performance of technologically intensive services by residents yields the teaching hospital more income than other types of services. These conditions within training institutions may further influence the career decisions of young physicians. To counteract these disincentives to provide primary care training centers in the graduate arena, many feel that as an interim measure primary care training programs in ambulatory settings should be given special consideration through grants and other financial mechanisms.

Since the reimbursement considerations cited may lead to incentives in the provision of care that are contrary to existing public policy which would emphasize more primary care in ambulatory settings and in rural areas, it has been suggested that alternative reimbursement mechanisms be explored in order to achieve these goals.

ROLE OF STATE AND LOCAL GOVERNMENTS

State and local governments provide support for undergraduate medical education in the form of State support of public medical schools and a small level of support to private medical schools. State and local appropriations in various proportions with Federal research and teaching funds provide the majority of total medical school revenues. Teaching hospitals are supported by State and local governments through the State share of Medicaid payments to teaching hospitals and through direct appropriations to hospitals which are owned by the State and local governments. According to the IOM study, Government appropriations provide 21.7 percent of funds for GME at state-owned hospitals and 39.6 percent at county and municipal hospitals.

The State and local governments have also been involved in efforts to influence physicians' career choices by financial incentive programs aimed at increasing the number of physicians in the underserved areas and also through preceptorships, special medical school courses, physician placement services, and innovative delivery systems. The National Health Council (1977) provides a summary of the various loan forgiveness, scholarship, and other incentive programs. A more detailed inventory of State programs is being conducted by the Department of Health and Human Services.

One advantage of decentralized programs of support for graduate medical education is that local authorities may be more perceptive of the perhaps unique needs of the individual areas. However, physicians do migrate among areas, and thus, if geographical maldistribution exists, it might best be viewed as a national problem. Furthermore, the levels of support for medical education and financial incentives for influencing physicians' career choices vary widely among the States.

It has been suggested that a Federal role vis-a-vis State and local programs could be the establishment of guidelines, monitoring, and sponsorship of evaluations of these programs relative to Federal objectives. This role also could include coordination among the State Health Planning and Developing Agencies for the purpose of helping to achieve national and State health manpower goals.

Federal financial support and encouragement for State initiatives would also seem appropriate to attract more physicians into local underserved areas as part of an overall strategy for meeting a balanced distribution of physicians' services. Federal support for these programs, perhaps as part of cost-sharing efforts, is important for the reasons discussed previously and in view of the fiscal realities and priorities within many States' budgets.

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III. FINANCING/REIMBURSEMENT CONCLUSIONS AND RECOMMENDATIONS

During its deliberations concerning reimbursement for medical services and financing of undergraduate and graduate medical education, the Graduate Medical Education National Advisory Committee (GMENAC) considered a wide range of issues. These included the impact of financing on physician specialty and geographic distribution; issues on design and quality of educational programs; efficiency; cost; funding stability for institutional planning; administrative mechanisms; potential roles of States; equity concerns, and the importance of continuing program evaluation relative to public and private sector objectives. The views provided here represent a combination of conclusions drawn from both empirical information and from informed judgments provided by Committee members.

It should be emphasized that this report was developed on the assumption that a slight surplus of physicians will exist in 1990. In addition, this report was developed with the recognition that serious consideration must also be given to what is likely to occur (and should occur) in the decade following 1990, and that a lead time of six to eight years is needed before the impact of any medical manpower programs begins to be felt. Taken together, such considerations form the basis for the balance of action, further study, monitoring, and other recommendations contained in this document.

Finally, it should be emphasized that this document addresses in turn the areas of undergraduate medical education, graduate medical education, and physician practice. Although that order is followed here, the reader must recognize that some overlapping of areas is unavoidable.

It was the view of the Committee that alterations in methods of financing undergraduate and graduate medical education, and changes in the system of reimbursement for medical services, offer valid mechanisms for influencing the specialty and geographic distribution of physicians. The Committee recognized, however, that in the immediate future modifications of the existing reimbursement system may not be achievable. Furthermore, GMENAC believed that in the short term, mechanisms of financing undergraduate and graduate medical education have greatest potential for effectively influencing physician specialty distribution. The undergraduate level seems appropriate because the undergraduate educational environment appears to have some effect on the career decisions of students. Overall enrollment levels, along with the number of first-year places in GME, also appear to influence specialty choices. The graduate level seems appropriate as well, since specific specialty and geographic location choices appear to be generally exercised at this level. (For further exposition on these latter points, the reader is referred to the report developed by the GMENAC Educational Environment Panel.)

UNDERGRADUATE MEDICAL EDUCATION

GMENAC gave much attention to the aggregate supply of physicians, as well as to specific specialty distribution. Specifically, and in view of 1990 supply and requirements projections and expectations for the year 2000, the Committee believed that aggregate medical school enrollment in the Unites States should not be increased beyond current levels. Much attention should be directed to recent developments concerning both alien graduates of foreign medical schools entering practice in the U.S. and the substantial expansion of the number of U.S. citizens studying medicine abroad. The number of such individuals returning to the U.S. to practice could seriously disrupt careful manpower planning. In addition, the issue was pertinent to the considerations of the GMENAC Finance Panel because U.S. citizens studying medicine abroad are eligible for federally sponsored loans and scholarships. (For further elaboration of these points, the reader is referred to the GMENAC Summary Report.)

Institutional Support

Capitation payments to medical schools with a requirement to increase undergraduate medical school enrollment were effective in helping to achieve an earlier objective of significantly increasing the Nation's aggregate supply of physicians. However, national priorities have shifted from that goal to one of assuring a more balanced speciality and geographic distribution of medical services. Capitation support, as presently structured to attempt to influence specialty and geographic distribution, does not appear to be effective.

Although unrestricted support to medical schools would seem to have little merit if its purpose is to meet specialty distributional objectives, these institutions are thought to exert influence on the career choices of the students. Evaluation efforts undertaken to date suggest that restricted institutional financial support to meet targeted specialty distributional objectives might be justified. For example, there is evidence at the graduate level that specialty-specific financial support to teaching hospitals has encouraged expansion in the numbers of residency positions offered in that specific specialty.

Recommendation 1

In view of an oversupply of physicians by the year 2000, any increase in medical school enrollment beyond current aggregate levels should be discouraged.

Recommendation 2

Capitation payments to medical schools for the sole purpose of influencing specialty choice or for increasing class size should be discontinued (or phased out should financial conditions of institutions warrant a time-phased approach to termination).

Most medical schools have only limited control over residency positions, and therefore, relatively little impact on the gateway to specialty training. More fruitful approaches for influencing specialty distributions would appear to rest with restricted grants to teaching hospitals for support of residency training programs.

Recommendation 3

Special purpose grants to support undergraduate and graduate medical education programs should be used to accomplish specific goals in special circumstances and can be an important, effective, and appropriate means of influencing the supply and distribution of physicians.*

Certain specialties should be considered for special project grants.

Recommendation 4

Special purpose grants to medical schools and other teaching institutions for primary care training in family medicine, general internal medicine, and general pediatrics should be continued.

-- Project grants for graduate and undergraduate programs in these specialties should be continued in order to continue emphasis upon ambulatory care needs.

-- Family practice programs at least for the short term, should be given special attention.

-- Specialties determined to be in short supply should be considered for special project grants as well.

-- Plans for the subsidy of any new specialty programs, if deemed appropriate, should include an analysis of their needs for long-term support.

Special grants for undergraduate and graduate programs in these specialties should be continued in order to reinforce emphasis on them as

* This general recommendation was adopted by GMENAC on a tentative basis at its plenary sessions on October 15-16, 1979.

well as to more generally support educational programs in ambulatory care. While recognizing the important linkage between undergraduate and graduate medical education in affecting career choice decisions, the Committee was of the view that the impact of graduate medical education is more direct and significant in this regard. Currently, reimbursement for services covers a smaller proportion of training costs in family practice, general internal medicine, and general pediatrics compared to most other specialties because of their emphasis on ambulatory care.

In addition, special support for family practice programs should be continued given its status as a relatively new specialty without an established faculty and without large sources of clinical income from inpatient activities and procedures.

Recommendation 5

Grants should be provided for the selective renovation and construction of ambulatory facilities in training institutions as well as for the establishment and support of training centers located in these facilities.

Medical education faculties, furthermore, should be encouraged to formulate and articulate the educational goals to be accomplished in ambulatory teaching settings. Also, consideration needs to be given to the financial problems posed for Health Maintenance Organizations, Independent Practice Associations, etc., as they seek to adopt an educational mission, and yet maintain financial viability in a competitive environment. Concerning this latter point, special financial strategies may need to be considered for encouraging educational programs in these settings. Any implementation of this recommendation must explicitly recognize the economic implications of any renovation construction programs. Decisions in this area, for example, may need to be tempered by consideration of priority uses of available funds.

Recommendation 6

Grants should be made available for the support of student preceptorships and residency experiences in ambulatory settings (especially in areas of clear underservice).

Evidence suggests that special project grants to medical schools and other teaching institutions have been instrumental to some degree in increasing both the number and range of primary care experiences (i.e., educational outcome) as well as the services provided to selected populations (i.e. service outcome). The emphasis in this recommendation is to broaden and strengthen the educational process, although an expectation exists that distributional concerns may be ameliorated to some extent in the process.

Student Support

The Committee believed that financial grants and aid to medical students with and without future service obligation and loans to medical students with forgiveness provisions are effective in accomplishing specific goals.

There was agreement that entry into the medical profession should not be determined on the basis of the financial resources of the applicants or their families. Financial grants and aid without future service obligation should continue for students who have exceptional financial need. Likewise, students from underrepresented ethnic groups should be encouraged to enter the medical profession by offering them financial grants and aid without future service obligation. In each of the preceding examples the Committee believed that increased funding should be provided to cover a larger number of students in each category, and to expand financial support to the second medical school year as well as to the first. Support to cover the first two years of medical school rather than just the first year will provide greater stability to school and career plans of the students affected.

In addition, the Committee believed that financial grants and aid with future service obligation, and student loans with forgiveness clauses, are effective and appropriate means of achieving a favorable geographic distribution of physicians. Both of these mechanisms may become even more effective as medical school tuition rises. In terms of their financial impact on students' choices, the two mechanisms cited can be considered as functionally equivalent. In some ways loan forgiveness provides planners and student greater flexibility, while financial grants and aid programs with future service obligation permit greater planning certainty by the granting agency. The evidence on these points, however, has been subject to varying interpretations.*

Students should be able to more easily finance their medical education out of future earnings. For example, a new loan program should be developed which will permit continually adjusted interest rates to reflect prevailing economic conditions with provision for long-term graduated repayment schedules. This would result in repayment of the borrowed funds at their full value at the time the loan was made. Graduated repayment set parallel with expected increases in physicians' earnings, furthermore, would lessen the repayment burden during the early practice-building years.

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* Financial support programs containing a future service obligation, however, should not require that medical students make premature decisions regarding their specialties or the location of their practices. The appropriate time for making these choices is at the end of medical school, when students have had the opportunity to learn about the various opportunities available to physicians for careers in medicine.

Recommendation 7

Financial grants and aid without future service obligation should be continued for first year medical students of exceptional financial need and for those students who are from underrepresented ethnic groups. Such support should be extended to cover the second year of medical school for these students.

Recommendation 8

Financial grants and aid with future service obligations and student loans with forgiveness provisions should be continued.

Recommendation 9

Consideration needs to be given to the development of an improved government loan program that would permit students to finance their own medical education.

GRADUATE MEDICAL EDUCATION

As suggested earlier in this report, information on future supply and requirements point to the likelihood of specific specialty imbalances over the next two decades. The Committee expects shortages in some specialties and surpluses in others. The earlier discussion on undergraduate medical education included a number of recommendations that addressed shortage conditions. The Committee was of the view that efforts to correct surplus conditions are also appropriate and necessary.

Private (Professional) Initiatives are Preferred

The Committee recognized that some specialties have taken steps to reduce the number of residency programs and/or the number of residents. Such private sector action should be the first line of action to ameliorate any current or projected specialty-specific imbalances. Careful analysis should include the current state of developments within the specialty pertaining to changing incidence of conditions and changes in diagnostic and therapeutic capabilities; the plans of the specialty to remedy the oversupply; and the range of other initiatives which may be needed, both public and private. When such determinations have been addressed, the most significant judgments about the availability of specialized services may best be made at the local level when possible. The Committee believed that a mechanism is needed to monitor the supply-requirements balance and, in the absence of sufficient progress by the profession, to recommend and perhaps implement more effective means to address specialty-specific supply problems.

Recommendation 10

To the extent that any specialties are determined to be in or will reach undersupply or oversupply, the private sector should develop

methods to remedy this situation, working as needed with Government at all levels.

Quality of Training Program

The Committee recognizes that quality variations exist among graduate medical education programs in the same specialty. GMENAC believed that an effective method should be developed to assess the quality of the training programs in every specialty. Leadership in this area should be exercised by the medical profession. It seemed appropriate that financing of the cost of the training program via the reimbursement system should be dependent upon demonstrated high quality of the program.

Recommendation 11

The private sector should take steps to ensure the quality of graduate medical education programs. When mechanisms are in place, consideration should be given to full financing and reimbursement only for approved programs.

Financial Considerations In Graduate Medical Education

Clarity in GME Costs--Extensive analyses and studies have been undertaken on the cost and financing of graduate medical education. These studies have repeatedly pointed out the lack of uniformity in standardized reporting and accounting procedures. They have continued to highlight the issue of joint products--the intermingling of the provision of medical services with the provision of education to residents. In the Committee's view, clarity of thought on alternative financing systems for graduate medical education would be advanced by greater clarity on specific costs involved with service activities and education.

Recommendation 12

The costs of graduate medical education should include compensation for residents as well as teaching personnel; education support services, such as the costs of library and audiovisual services; the costs of administering the program; and indirect costs such as plant depreciation, cafeteria and laundry services, administrative services, etc., ascribable to the teaching program.*

Recommendation 13

A uniform recognized reporting system should be developed to permit meaningful cost accounting distinctions between graduate medical education and patient care costs.

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* This recommendation was adopted by GMENAC on a tentative basis at its plenary session on October 15-16, 1979.

The Cost Accounting Standards Board may be a logical mode for implementing this recommendation. This Board, established by Congress primarily to develop cost accounting standards relative to defense contracts, has accumulated considerable expertise in cost accounting. Clarity in GME costs through development of such a reporting system would permit more informed consideration and possible implementation in the future of alternate methods of payment of GME costs (see following section on appropriate source of funds). It could also provide the possibility of reducing GME costs without altering the quality of graduate medical education. The development of such cost accounting and reporting distinctions can be the natural outgrowth of a uniform reporting system for all health care costs in institutional health care facilities.

Appropriate Source of Funds--The question of the appropriate source of funds for the support of graduate medical education is both complex and controversial. Several alternatives have been suggested: Educational and service payment by the patient (i.e., a continuation of the patient care reimbursement mode); use of a separate national fund to pay for graduate medical education; transferring an obligation for financing graduate medical education to the medical schools; the use of revenue generated by physicians, and expecting residents to pay for their own training.

Currently, reimbursement for medical services by third parties is the primary source of funds for compensation of the residents and fellows. According to the COTH Survey of House Staff Policy and Related Issues, 1977, for example, 75 percent of house staff stipends in non-VA hospitals was derived from patient revenues. An Institute of Medicine study of 81 non-Federal teaching hospitals, indicated that 79 percent of house officers' compensation was taken from the hospital general operating funds (the major part of which was derived from patient service revenues). Roughly one-half to three-fourths of house officers' time is spent in activities related to patient care, with variability in the proportion depending on such factors as specialty, the stage of residency training, and training site. However, because residents simultaneously pursue different activities, including patient care, education, teaching, and research, the allocation of time to each separate activity cannot be assigned precisely.

The Committee considered compensation of house staff to be justified because of the patient care and teaching provided by them. Furthermore, since a large proportion of house staff time is spent in activites related to patient care, and in recognition of the value of the medical care services and teaching rendered by residents during their training, it seems appropriate that revenues from patient care continue to be used for the major share of GME costs. It is necessary that such costs be borne equally by all payors of patient care expenses, including the Federal and State Governments, third-party payors, and self-paying patients. Furthermore, these costs should be recovered from revenues from all sites where services and education are provided, i.e., teaching hospitals, ambulatory sites, nursing homes, schools, etc.

Several points merit emphasis. First, residents are compensated at a lower salary rate than they could obtain in practice. The educational

benefits derived by them during training represent compensation for the income differential. From a cost viewpoint, it would be at least as expensive to replace residents with other health personnel.

Second, controversy exists on the appropriateness of paying educational expenses with funds meant to provide services to patients. The Committee believed that currently available information on respective costs and benefits of GME is not sufficiently precise to permit financing of graduate medical education based on its costs alone. Specifically, current methods of cost accounting make it difficult to accurately determine the financial value of residents' services or the effect of GME on the cost or quality of patient care.

Finally, flexibility in advancing a recommendation in this area is needed. In order to assure stability of funding, graduate medical education costs must be fully understood and financing broadly based in order to obtain a reasonable distribution of costs among benefiting individuals and institutions. Alternative approaches to financing and their implications should continue to be fully explored, especially if conditions in future years require changes to be made.

Recommendation 14

The costs of GME should be borne equitably by all payors as part of the normal rate structure for patient care costs at the teaching hospitals, clinics, and other sites where health services and training are provided, to the extent that such costs are not financed by tuition, grants or other sources of revenue.*

Revenues from patient services currently represent the most stable and dependable source of support for this activity. This method of payment may require further exploration should changes in the system of financing and reimbursement of health care costs and the development of more exact information on the costs and benefits of GME so warrant.**

Cost Containment--In its review of financing issues, the Committee was cognizant of the need to seek economies in resource allocation. GMENAC believed that graduate medical education specifically, and the education of health care providers generally, are areas where the need for cost consciousness is no less pressing than in other segments of the health care sector. With appropriate attention to educational quality, optimal patient care, and access considerations, the Committee believes that a concerted and accountable effort should be undertaken in the private sector to seek economies in the further evolution and provision of graduate medical education.

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* This recommendation represents a revised version of the statement adopted by GMENAC on a tentative basis at its plenary session on October 15-16, 1979.

** It should be noted that some payors, including the Federal Government, are presently excluding certain GME costs from being combined with patient care costs, in effect shifting costs disproportionately to other payors.

Recommendation 15

Cost considerations should be given explicit and prominent attention in any proposals to change the standards and processes of accreditation in graduate medical education, the length of training, certification requirements, and proposals to initiate new types of training programs and develop new specialties.

Efforts should commence to integrate efforts across specialties if the integration would decrease costs of training.

Recommendation 16

With respect to new and existing training programs, the Committee believes that administrators, faculty, and residents must exercise a clear and strong responsiblity to continually seek and implement opportunities for cost-savings in health care within an overall context of balancing quality, cost, and access considerations.

In the context of this responsibility, a concerted effort must be made to educate students, at both undergraduate and graduate levels, to the economies of health care delivery and the nature of resource scarcity. To the extent compatible with considerations of quality and access, cost saving approaches should be given priority in the design of new health service programs. The Committee recognized that steps in this direction have already been taken by the private sector (e.g., impact statement requirements of the Liaison Committee on Graduate Medical Education; some specialty boards are changing their requirements and their examinations). Such actions should be further encouraged and strengthened. The mechanisms to be established to monitor the changing supply requirements balance should also monitor the progress made by the programs in attaining cost-saving outcomes.

Academic Needs

As part of the GMENAC deliberations, attention was given to the future needs in this country for medical faculty, administrators, and researchers--critical national resources in the health system. The Committee believed strongly that adequate financial support to train academicians should be available.

Recommendation 17

Adequate financial support must be provided for programs directed towards the development of future medical faculty, administrators, and researchers.

COMPENSATION FOR PHYSICIANS' SERVICES

The Reimbursement System

Reimbursement for patient care services primarily in hospital settings currently supports about four-fifths of the direct costs of graduate medical education. The Committee believed that the influence of the details of the reimbursement system is very broad, extending even to the specialty and geographic distributional patterns of health care providers and to the mix of services actually provided. Likewise, changes in the reimbursement system is recognized as a potentially significant mechanism for changes in health services and in health manpower distribution. The effect of changes in reimbursement on practitioners and institutions is likely to be immediate and continuing.

Current reimbursement practices have resulted from third-party payment methods and more recently have been significantly impacted by Medicare and Medicaid. Since approximately one-fourth of personal health care expenditures are channeled through these two programs, their influence on the entire sector is pervasive. With any advances toward national health insurance, the influence of Government-paid health care costs would likely increase.

Current reimbursement mechanisms for professional services and procedures, including the usual customary and reasonable basis for payment of professional fees and the level of reimbursement for ambulatory and hospital charges, would appear to have the following effect:*

- -- Favor the use of tests and procedures, rather than careful patient histories, physicial examinations, patient education, and counseling
- -- Favor hospitalization, rather than ambulatory care
- -- Influence the future practice habits of physicians in training
- -- Discourage teaching in ambulatory settings
- -- Favor the selection by medical students and residents of specialties which use tests and procedures extensively

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* This specific statement on reimbursement represents a modified version of the statement adopted by GMENAC on a tentative basis at its plenary session on November 29-30, 1979. In general, this statement represents the informed views of Committee members, in contrast to results of vigorous, empirical investigations. A recognition exists that such effects may be influenced by other factors as well (e.g., locational preferences, impact of role models, etc.).

-- Favor the selection of a site to practice in relatively more affluent areas or where satisfactory reimbursement levels are in place

-- Favor the perpetuation of present circumstances into the future, and act as a deterrent to change in present methods of health care delivery, e.g., make it difficult for Medicaid patients to obtain private medical services and deter the use of nonphysician health service providers.

The Committee believed that a number of incentives embodied in existing payment policy and practice are inconsistent with public policies to contain health care costs, to encourage ambulatory rather than hospital care, and to achieve a more favorable geographic distribution of physicians. For example, outpatient or ambulatory care services are generally subject to coinsurance and/or deductible provisions applied to schedules of charges, while hospital inpatient services tend to be reimbursed at full cost. Further, existing methods of paying physicians tend to preserve interspecialty and inter-area fee variations, even for identical services.

Despite shortcomings of the present system, a cursory examination of major insurance proposals and alternatives offered to change reimbursement suggest that they mainly represent extensions of existing health care financing arrangements (with slight modifications) to uninsured segments of the population. Issues of cost control and improved access tend to be the dominant concerns. The implications of the suggested reimbursement changes on physician specialty and geographic choices, in contrast, tend to be of less concern.

Four major reimbursement changes have been discussed: (1) Direct cost sharing by patients (coinsurance rates and deductibles) in both ambulatory and inpatient care settings; (2) revisions of the relative fee levels to be paid for various procedures, for services provided in different geographic areas, and for services provided by different specialties in order to achieve modifications in physician specialty and geographic distribution and physicians' practice patterns; (3) revision of the methods of reimbursing hospitals, with an accounting change to distinguish between education and patient care costs, and (4) the development of markedly different payment methods, plans, and coverage.

To assist GMENAC in its considerations related to financing graduate medical education, the National Center for Health Services Research commissioned Jack Hadley, Ph.D. and associates to review the literature in this field and make recommendations. The executive summary of their final report included the following passage:*

* Hadley, J. et al.. Executive Summary, Financing Medical Education: Issues and Options, National Center for Health Services, Research Basic Ordering Agreement No. HRA 230-77-0007, June 30, 1978, 9-11.

". . . there are several reimbursement options which merit consideration within the GME context. These are:

- -- Eliminating inpatient/outpatient differentials in teaching hospital reimbursement
- -- Altering relative fees by specialty, procedure, or area
- -- Direct billing by residents for patient care services rendered
- -- Reimbursement of nonhospital physician training centers, e.g., clinics and group practices
- -- Revenue cost regulation of hospitals"

These and other reimbursement alternatives were discussed by both the full GMENAC Committee and its financing subgroup. Given the constraints of time and funds, the Committee could not provide more specific proposals for change than the general recommendations that follow. GMENAC recognized the complexity of this subject and acknowledged that the reimbursement system is being reexamined by insurors, the Federal Government, the medical profession, trade unions and corporations--indeed by the entire health care industry. The Committee believed that a successor body similar to GMENAC should focus on such financing/reimbursement issues as a major priority charge for the early 1980s (see recommendation No. 24 in this chapter).

Recommendation 18

Public and private reimbursement policies should be adjusted and mechanisms identified to provide incentives for physicians to:

- -- Emphasize ambulatory care. Services should be reimbursed so as to provide incentives for comprehensive, continuing care including prevention, health education, and counseling, with the major focus on the provision of the highest quality and most efficient services possible in nonhospital settings.
- -- Practice in geographic areas which are medically underserved.

National Health Underwriting and the Concept of Shared Risk by Physicians

The Committee believed that underwriting arrangements that advance risk sharing by physicians should be encouraged. Historically, physicians have been involved in the financing mechanism simply as recipients of payments. Physicians have not been financially responsible for the rates at which health services have been utilized. The Committee believed that risk sharing by physicians in plans where physicians become accountable for the rates of utilization of health services by their patients provides opportunities for expense reduction. Of course,

assurance of quality standards must be provided for. The experience with Independent Practice Associations, for example, has been cited as a private sector reimbursement system which helps meet cost containment objectives. The experience of such arrangements merits further examination (e.g., whether the success of those that appear to be working satisfactorily reflect an across-the-board mix of patient problems or whether they reflect sociodemographic differences that do not encompass the total population).

Recommendation 19

Public and private sector dialog focusing on health insurance options or reimbursement policies should explicitly consider the implications for physician specialty and geographic distribution of any proposals to alter payment policy and practice. The concept of shared risk among physicians should clearly be given emphasis in such explorations.

Payment of Professional Fees To Teaching Physicians

The payment for professional services in teaching hospitals represents a major area of concern. The Committee recognized the high quality of the patient-care services rendered by residents and fellows during their graduate medical training. Patients and third-party reimbursers, therefore, should provide compensation for these services, but only for the quantity of the services that are identifiably necessary for the provision of care. If the teachers and the trainees perform services that are duplicative in nature because of the teaching function, double payment for those services should not be provided. More precise accounting separation of teaching and education costs are needed in order to implement an improved mechanism. Also, when teaching physicians perform patient services while engaged in supervising and/or instructing residents, they should be compensated by patients and third-party payors only when they have rendered personal and identifiable medical services to the patient or have personally managed the provision of care to the patient. The amount of payment for professional services should be equitably determined by the value of these services to the patients. The reimbursement level to providers of medical care services should not be reduced because of their having provided free care or reduced-fee care for indigent patients.

Recommendation 20

A number of principles regarding the payment for services in teaching hospitals should be adopted by third-party payors. They include recognition of the need to compensate services to patients rendered by residents and supervising physicians that are necessary for the care of patients. Payment policies should avoid duplicate payment for services rendered; compensate teaching physicians when they have rendered personal and identifiable medical services or have personally managed the provision of care to a patient while engaged in supervising and/or instructing residents, and compensate professional services on an equitable basis.

Emphasize Teaching in Ambulatory Settings

Changes in reimbursement designed to encourage the development of teaching in ambulatory settings are needed. Any changes in the reimbursement system that would modify payments to physicians across different geographic areas should be constructed so that the cost of providing service in each area is reflected in the formulae.

Recommendation 21

A more adequate reimbursement system for physicians' services in ambulatory and outreach settings should be developed to facilitate educational experiences in such settings.

ROLE OF STATE AND LOCAL GOVERNMENTS

Over the last 15 years, State and local governments have been the source of an increasing share of the financial support for medical education. Although this support is given largely to publically owned medical schools, there has been a growing, although still small, trend toward support of private medical schools. GMENAC believed that an even larger role for States and local communities in financing medical education should be encouraged. Among levels of government, States and localities would appear to be in the best position to identify problems in the geographic distribution of physicians, to design programs for dealing with these problems, and to closely monitor the performance of such efforts. This argues for encouraging successful State and local initiatives in this area. Consideration should be given to the concept of channeling Federal support for medical education through such governments.

Despite these points, the Committee also recognized several arguments for moving cautiously. First, adequate study of non-Federal programs has not been carried out. Second, the merits of decentralized programs may be more relevant in their direct impact on the provision of medical services than on their indirect impact on specialty and geographic distribution. Third, the potential of health planning and financing medical education to affect physician geographic distribution remains untested.

The Federal Government should support State and local initiatives that have shown positive results in meeting distribution imbalances. Factors which should be considered in assisting or establishing State programs include: indicators of a successful program; administrative arrangements and costs; quality control and monitoring factors; the potential for integrating the recommendations derived from health planning with State financing programs; and impact on public versus private medical schools, etc.

To improve the geographic distribution of physicians, the Committee recognized that a direct grant program for physicians to establish practice in underserved areas would probably not change location decisions of established physicians. Such grants might be attractive mainly to physicians who have already decided upon underserved locations and would not be additive. As an alternative, a mechanism such as a guaranteed minimum net income program would probably be less costly, easier to monitor, and not as discriminatory against physicians already practicing in an underserved area. The guarantee feature of the program could be shared across governmental units (i.e., local community, State, and Federal) and could vary on the basis of years of practice in an underserved area. The concept of such a program might have applicability to a variety of other health care disciplines. Limited experimentation in this and other Federal, State, local collaborations should be encouraged. (For further discussion of incentives for impacting the geographic distribution of physicians, the reader is referred to the GMENAC Geographic Technical Panel Report.)

Recommendation 22

Special project grants for States on a cost sharing basis should be considered for programs to influence the distribution of physicians within the States. Consideration should particularly be given to the development of incentives for practice in underserved areas, which would be jointly sponsored among governmental levels.

FURTHER RESEARCH NEEDED

Several important caveats to this overall set of recommendations should be made explicit. First, information remains limited concerning the exact responsiveness to financial incentives by medical students, residents, medical schools, and teaching hospitals. Uncertainty exists as to how large a grant or scholarship would be required to induce an additional medical student to enter a primary care residency.

Second, it must be recognized that despite significant methodological and data contributions developed by GMENAC, precise information still needs to be refined on supply and requirements profiles of physicians. The state-of-the-art poses some constraints for determining beforehand the total amount of financial incentive needed. The number of variables and their interdependence in affecting the availability of medical services are so extensive that even the best models are incomplete. Thus, whatever combination of financial policies is implemented, it is imperative that careful monitoring and evaluation of their effects be carried out.

Third, financial incentives are but one of several classes of policies that could be used to influence graduate and undergraduate medical education. The network of State and local health planning agencies, private educational and professional organizations, Federal, State and local governments, etc., can all have major effects on the structure and organization of medical education. Potential nonfinancial

options are numerous (see, for example, recommendations of the GMENAC Educational Environment and Geographic Technical Panels). The Committee believed that financial and nonfinancial policies are complementary. A variety of approaches should be considered and each requires the same monitoring and readjustment over time.

Fourth, and as noted in the report written by Dr. Hadley, et al., "It should be emphasized that changing the distribution of physicians does not require changing the career choices of all young physicians. If, for the next five years, one additional doctor in 15 were induced to enter practice in a rural, underserved area, the shortage of doctors in rural areas would be a much less pressing issue. Thus, financial incentives could succeed even if they affected the decision of only a small number of physicians."

Significantly, the fundamental issue and the real output of physicians are medical care and medical services; the numbers of physicians and their distribution among the specialties and by location are inputs.

Recommendation 23

In view of the current state-of-the-art concerning the knowledge base on reimbursement/financing issues, additional research in this area is warranted and should be encouraged. Among the many research questions the following should be pursued:

-- Studying the differential cost, effects on program quality, and the relative effectiveness in meeting physician manpower needs of increased graduate medical education and training in out-of-hospital settings (e.g., physicians' offices, HMOs, Public Health Departments, etc.). This will require additional knowledge regarding the (marginal) costs and revenues and the effect of Government subsidy attendant to such programs, as well as the relationship to "essentials" and accreditation of training programs

-- Determining differential costs of each existing financing strategy in achieving goals in distribution of residency positions by specialty

-- Investigating the impact of financial incentives on public versus private training institutions

-- Developing and evaluating demonstration projects for collection and feedback of statistics relative to community-wide fees and payment practices on a specialty and condition-specific basis

-- Examining the relationship of medical students' indebtedness and characteristics to ultimate career choice

-- Evaluating the implications on health manpower of reimbursement for services provided by nonphysicians on an independent free-standing basis

-- Studying the variations in medical practice provided by different medical specialties for the same or similar disease conditions, in the context of relative costs, long-term outcome studies, and cost benefit.

LONG-TERM MONITORING & EVALUATION

A number of the recommendations advanced in this paper address proposed changes in financing and reimbursement policy, either through action steps or by further study. Developments in this area warrant close monitoring over time, with evaluative efforts undertaken in tandem.

Recommendation 24

An ongoing mechanism needs to be developed to carefully monitor and evaluate the impact of existing and new economic incentives and disincentives targeted to medical education and practice. Actions undertaken to alter financing and reimbursement strategies should not be advanced as permanent mechanisms for change until adequate evaluation/demonstration efforts are first performed.

Further work addressing and monitoring financing/reimbursement developments would represent an appropriate role for a GMENAC-like successor body to the Committee. To facilitate such a role, however, the membership of this successor body needs to include the necessary expertise to deal with this subject in depth. The composition, for example, should lend itself to detailing specific problem areas in physician practice reimbursement (including issues of equity relevant to all specialty groups) and to delineating specific recommendations for change as appropriate.

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